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10/666,742	09/19/2003	Alan G. Wood	2269-6095US (03-0593.00/U)	6057
63162 7590 08/19/2009 TRASK BRITT, P.C./ MICRON TECHNOLOGY P.O. BOX 2550 SALT LAKE CITY, UT 84110			EXAMINER GHYKA, ALEXANDER G	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALAN G. WOOD, WARREN M. FARNWORTH, DAVID R.
HEMBREE, DAVID R. HEMBREE, SIDNEY B. RIGG, WILLIAM M.
HIATT, PETER BENSON, KYLE K. KIRBY and SALMAN AKRAM

Appeal 2009-004480
Application 10/666,742
Technology Center 2800

Decided: August 17, 2009

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and
CATHERINE Q. TIMM, Administrative *Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 70-74, 76-86 and 88-98. Claim 17-20 and 23-34 have been allowed by the Examiner, while claims 75 and 87 have been deemed to contain allowable subject matter.

Claims 70 and 82 are illustrative:

70. A method for thinning a semiconductor substrate, comprising:
molding a support structure on an active surface of the semiconductor substrate;
removing material from a back side of the semiconductor substrate to form a thinned semiconductor substrate; and
transporting the thinned semiconductor substrate for further processing.

82. A method for thinning a semiconductor substrate, comprising;
forming a support structure on an active surface of the semiconductor substrate;
securing the semiconductor substrate to a platen with the active surface facing the platen and the support structure abutting at least one surface or feature of or on the platen;
removing material from a back side of the semiconductor substrate supported by the support structure and the platen to form a thinned semiconductor substrate; and
transporting the thinned semiconductor substrate for further processing.

The Examiner relies upon the following references as evidence of obviousness:

Leedy	5,354,695	Oct. 11, 1994
Tandy	6,524,881 B1	Feb. 25, 2003
Grigg	6,562,661 B2	May 13, 2003

The present application was before us in a prior appeal (Appeal no. 2007-0942). The main distinction between the claims in the parent application and the present claims on appeal is that claim 17 in the parent application recited “forming a support structure on an active surface of the

semiconductor substrate”, whereas instant claim 70 recites “molding a support structure on an active surface of the semiconductor substrate”. Also, instant claim 82 recites forming a support structure on the active surface and securing the active surface of the substrate to a platen. In a Decision dated March 5, 2007, we affirmed the Examiner’s rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) based on the Leedy and Grigg references presently applied by the Examiner.

Appealed claims 70-74, 76-86 and 88-98 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Leedy in view of Grigg and Tandy.

Appellants do not present separate arguments for claims 71-74, 76-81, 83-86 and 88-98. Accordingly, these claims stand or fall together with the independent claims upon which they ultimately depend.

We have thoroughly reviewed each of Appellants’ arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner’s rejection for the reasons set forth in the Answer, as well as those articulated in our prior Decision, and we add the following primarily for emphasis.

We agreed with the Examiner in the prior appeal that Leedy describes forming a support structure 19 on the active surface of a semiconductor substrate and removing material from the back side of the substrate to form a thin semiconductor substrate. We also agreed with the Examiner that Grigg evidences the obviousness of forming a layer of unconsolidated material over the outer peripheral portion of the active surface of a semiconductor

substrate and then partially consolidating the material. As for the claim 70 requirement of molding a support structure on the active surface of the substrate, we fully concur with the Examiner that Tandy establishes the obviousness of doing so.

Tandy, like Appellants and Leedy, provides a support structure on the active surface of a semiconductor substrate which backside is thinned while further supported on a platen. Tandy describes submount 17 as a support structure for the active surface of semiconductor substrate 10, and teaches that the submount support can be formed from a molding compound (col. 5, ll.36-40). Hence, we are convinced that one of ordinary skill in the art would have found it obvious to perform the claimed method of molding a support structure on the active surface of a semiconductor substrate to protect the active surface and provide support while the back side of the substrate is thinned.

Appellants maintain that “Tandy provides no teaching or suggestion that the submount 17 is molded onto an active surface of a semiconductor substrate...it appears from the disclosure of Tandy that the submount 17 is part of a platen 56, which provides physical support for a semiconductor substrate, such as a wafer 10, during backgrinding. Col. 5, ll. 30-34” (Reply Br. 2, last para.). However, the cited portion of Tandy, as well as the subsequent disclosure relevant to the supporting submount 17, provides no indication that submount 17 is part of platen 56. In fact, Tandy is silent regarding whether submount 17 is bonded to the active surface of the semiconductor substrate or the platen. However, we are persuaded that one of ordinary skill in the art would have found it obvious to, alternatively,

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place submount 17 on either the substrate or the platen to provide support and protection of the substrate during the thinning process.

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a)(1)(v).

AFFIRMED

tc

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